

SEQUENCE LISTING

<110> SUNTORY LIMITED

<120> New Hemolytic Proteins and Gene Coding Thereof

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5 <150> JP10-88569

<151> 1998-04-01

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<170> PatentIn Ver. 2.0

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Asn Lys

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10 Phe Ile Val Leu Ala Ile Thr Ser Ala Lys His Gly Lys Arg Ser Asp

10 15 20 25

gtc aat tct tta ctt act aag gta gaa act gcc tta aaa gaa gct tct 150

Val Asn Ser Leu Leu Thr Lys Val Glu Thr Ala Leu Lys Glu Ala Ser

30 35 40

15 ggt agc aac gag gct ctt gag gct tta gag ggc tta aaa gga gag 198

Gly Ser Asn Glu Ala Ala Leu Glu Ala Leu Glu Gly Leu Lys Gly Glu

45 50 55

atc cag aca aaa cca gac cga gtt gga caa gcc aca aaa atc ctt gga 246

Ile Gin Thr Lys Pro Asp Arg Val Gly Gin Ala Thr Lys Ile Leu Gly

20 60 65 70

tct gtc gga tca gct cta gga aaa tta aat tct gga gat gca acc aaa 294

Ser Val Gly Ser Ala Leu Gly Lys Leu Asn Ser Gly Asp Ala Thr Lys

75 80 85

atc att tct ggt tgc ctc gac att gtt gca gga att gca aca act ttt 342

25 Ile Ile Ser Gly Cys Leu Asp Ile Val Ala Gly Ile Ala Thr Thr Phe

90 95 100 105

gga ggc cct gtc ggg atg gga atc gga gcc gta gct tct ttt gtt tct 390

Gly Gly Pro Val Gly Met Gly Ile Gly Ala Val Ala Ser Phe Val Ser

110 115 120

tca att cta tca ttg ttt act gga agc tca gca aag aac tca gtt gct 438  
Ser Ile Leu Ser Leu Phe Thr Gly Ser Ser Ala Lys Asn Ser Val Ala  
125 130 135  
gcc gtt att gat aga gct tta agc aag cat cgc gat gag gcc atc caa 486  
5 Ala Val Ile Asp Arg Ala Leu Ser Lys His Arg Asp Glu Ala Ile Gln  
140 145 150  
aga cat gca gca ggt gcc aag aga gat ttt gct gaa tca tct gca ttc 534  
Arg His Ala Ala Gly Ala Lys Arg Asp Phe Ala Glu Ser Ser Ala Phe  
155 160 165  
10 att cag gtc atg aaa cag cag tcc aat ctt aca gat agc gac cta agt 582  
Ile Gln Val Met Lys Gln Gln Ser Asn Leu Thr Asp Ser Asp Leu Ser  
170 175 180 185  
atc att gca gcg aat gtt cct gtt tat aaa ttt agt aat ttt atc gga 630  
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cag ttg gag agc aga att tcc caa ggc gca gca act acc agt ctt agc 678  
Gln Leu Glu Ser Arg Ile Ser Gln Gly Ala Ala Thr Thr Ser Leu Ser  
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20 Asp Ala Lys Arg Ala Val Asp Phe Ile Leu Leu Tyr Cys Gln Leu Val  
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Val Met Arg Glu Thr Leu Leu Val Asp Leu Ala Ile Leu Tyr Arg Lys  
235 240 245  
25 gga aat gca gaa cac gtg gca agt gct gtg gaa aac gct aat agg gta 822  
Gly Asn Ala Glu His Val Ala Ser Ala Val Glu Asn Ala Asn Arg Val  
250 255 260 265  
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Asn Lys Glu Leu Ala Ala Asp Thr Leu Asp Phe Leu His Lys Leu Ile

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5	gaa act agc aaa gca ata tta aat tac acg aaa tac ttt gga gtt cca 966			
	Glu Thr Ser Lys Ala Ile Leu Asn Tyr Thr Lys Tyr Phe Gly Val Pro			
	300	305	310	
	gat gtt ccc cgt cct att gga aac cgc aga tac aaa ttt aca aat agt 1014			
	Asp Val Pro Arg Pro Ile Gly Asn Arg Arg Tyr Lys Phe Thr Asn Ser			
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	atg ttc aga ggc tgt tct aac gtt cgg aat cca aat atc agg gta tcc 1110			
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	aaa atg tct gat ggg ttt tac acc atg gag aat agc gat cgg agg aag 1158			
	Lys Met Ser Asp Gly Phe Tyr Thr Met Glu Asn Ser Asp Arg Arg Lys			
	365	370	375	
20	ttg tat atc acc aag cat gac caa gga tgg gga tgg ggt act ttg gat 1206			
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	Glu Asp Pro Gly Asp Gln Gly His Met Arg Phe Ile Pro Leu Arg His			
25	395	400	405	
	ggg aag tat atg gta agc tct aag agg tgg ccc aac tgg ttc atg tat 1302			
	Gly Lys Tyr Met Val Ser Ser Lys Arg Trp Pro Asn Trp Phe Met Tyr			
	410	415	420	425
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Met Glu Ser Ser Ala Ser Gly Tyr Ile Arg Ser Trp Glu Asn Asn Pro

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435

440

gga cct caa gga cat tgg agt ata aca taa ttaaagagga atcaacaatg 1400

Gly Pro Gln Gly His Trp Ser Ile Thr

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tcccaaaggc atacgaatat aagacatcaa acgaatgcag tacttaaagt gcacacttgt 1460

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<213> CARYBDEA RASTONII

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Ser Ala Lys His Gly Lys Arg Ser Asp Val Asn Ser Leu Leu Thr Lys

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20

25

30

Val Glu Thr Ala Leu Lys Glu Ala Ser Gly Ser Asn Glu Ala Ala Leu

35

40

45

Glu Ala Leu Glu Gly Leu Lys Gly Glu Ile Gln Thr Lys Pro Asp Arg

50

55

60

25

Val Gly Gln Ala Thr Lys Ile Leu Gly Ser Val Gly Ser Ala Leu Gly

65

70

75

80

Lys Leu Asn Ser Gly Asp Ala Thr Lys Ile Ile Ser Gly Cys Leu Asp

85

90

95

Ile Val Ala Gly Ile Ala Thr Thr Phe Gly Gly Pro Val Gly Met Gly

100 105 110  
Ile Gly Ala Val Ala Ser Phe Val Ser Ser Ile Leu Ser Leu Phe Thr  
115 120 125  
Gly Ser Ser Ala Lys Asn Ser Val Ala Ala Val Ile Asp Arg Ala Leu  
5 130 135 140  
Ser Lys His Arg Asp Glu Ala Ile Gln Arg His Ala Ala Gly Ala Lys  
145 150 155 160  
Arg Asp Phe Ala Glu Ser Ser Ala Phe Ile Gln Val Met Lys Gln Gln  
165 170 175  
10 Ser Asn Leu Thr Asp Ser Asp Leu Ser Ile Ile Ala Ala Asn Val Pro  
180 185 190  
Val Tyr Lys Phe Ser Asn Phe Ile Gly Gln Leu Glu Ser Arg Ile Ser  
195 200 205  
Gln Gly Ala Ala Thr Thr Ser Leu Ser Asp Ala Lys Arg Ala Val Asp  
15 210 215 220  
Phe Ile Leu Leu Tyr Cys Gln Leu Val Val Met Arg Glu Thr Leu Leu  
225 230 235 240  
Val Asp Leu Ala Ile Leu Tyr Arg Lys Gly Asn Ala Glu His Val Ala  
245 250 255  
20 Ser Ala Val Glu Asn Ala Asn Arg Val Asn Lys Glu Leu Ala Ala Asp  
260 265 270  
Thr Leu Asp Phe Leu His Lys Leu Ile Pro Glu Gln Ala Leu Ile Gly  
275 280 285  
Ala Val Tyr His Pro Ile Ser Ala Ser Glu Thr Ser Lys Ala Ile Leu  
25 290 295 300  
Asn Tyr Thr Lys Tyr Phe Gly Val Pro Asp Val Pro Arg Pro Ile Gly  
305 310 315 320  
Asn Arg Arg Tyr Lys Phe Thr Asn Ser Tyr Trp Asn Thr Tyr Ser Ile  
325 330 335

Cys Ser Glu Ala Tyr Met Gly Asn Tyr Met Phe Arg Gly Cys Ser Asn

340

345

350

Val Arg Asn Pro Asn Ile Arg Val Ser Lys Met Ser Asp Gly Phe Tyr

355

360

365

5 Thr Met Glu Asn Ser Asp Arg Arg Lys Leu Tyr Ile Thr Lys His Asp

370

375

380

Gln Gly Trp Gly Trp Gly Thr Leu Asp Glu Asp Pro Gly Asp Gln Gly

385 390 395 400

His Met Arg Phe Ile Pro Leu Arg His Gly Lys Tyr Met Val Ser Ser

10 405 410 415

Lys Arg Trp Pro Asn Trp Phe Met Tyr Met Glu Ser Ser Ala Ser Gly

420

425

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Tyr Ile Arg Ser Trp Glu Asn Asn Pro Gly Pro Gln Gly His Trp Ser

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445

15 Ile Thr

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